



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
[www.uspto.gov](http://www.uspto.gov)

fw

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/617,855	07/14/2003	Dong-Ryeol Lee	1293.1839	3801
21171	7590	07/10/2006	EXAMINER	
STAAS & HALSEY LLP SUITE 700 1201 NEW YORK AVENUE, N.W. WASHINGTON, DC 20005				GOMA, TAWFIK A
ART UNIT		PAPER NUMBER		
2627				

DATE MAILED: 07/10/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	Application No.	Applicant(s)
	10/617,855	LEE ET AL.
	Examiner Tawfik Goma	Art Unit 2627

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) Responsive to communication(s) filed on amendment filed 4/24/2006.
- 2a) This action is FINAL.                    2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) Claim(s) 1,3,4,6-9,11,12,14,15,17-20,22-26 and 28-37 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) Claim(s) \_\_\_\_\_ is/are allowed.
- 6) Claim(s) 1,3,4,6-9,11,12,14,15,17-20,22-26 and 28-37 is/are rejected.
- 7) Claim(s) \_\_\_\_\_ is/are objected to.
- 8) Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on \_\_\_\_\_ is/are: a) accepted or b) objected to by the Examiner.  
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
  - a) All    b) Some \* c) None of:
    1. Certified copies of the priority documents have been received.
    2. Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
    3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)                     |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                     | Paper No(s)/Mail Date. _____ .  |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ . | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
|  | 6) <input type="checkbox"/> Other: _____ .                                  |

## DETAILED ACTION

### ***Claim Rejections - 35 USC § 112***

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claim 3 recites the limitation "the collimator lens" in 3. There is insufficient antecedent basis for this limitation in the claim.

### ***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1, 3, 6, 9, 11, 12, 14, 17, 20, 22, 23, and 24 are rejected under 35 U.S.C. 102(e) as being anticipated by Kim et al (US 2002/0136132).

The applied reference has a common assignee with the instant application.

Based upon the earlier effective U.S. filing date of the reference, it constitutes prior art under 35 U.S.C. 102(e). This rejection under 35 U.S.C. 102(e) might be overcome either by a showing under 37 CFR 1.132 that any invention disclosed but not claimed in the reference was derived from the inventor of this application and is thus not the invention "by another," or by an appropriate showing under 37 CFR 1.131.

Regarding claims 1, 3, 12, 14, and 23, Kim discloses an optical pickup of an optical disc for a recording/reproducing apparatus (fig. 3), comprising: a light source emitting a light (102, 103, fig. 3); an objective lens (130, fig. 3) focusing the light emitted from the light source and irradiating the light on the optical disc (135, fig. 3) a collimating lens (125, fig. 3) making the light emitted from the light source into a parallel light; and a hologram optical element (105, fig. 3) adjusting a convergence and/or a divergence of the light and proceeding to the objective lens, and wherein the hologram optical element is adjusted along an optical axis to adjust the convergence and/or divergence of the light emitted from the light source during assembly of the optical pickup (fig. 4 and par. 31)

Regarding claims 6, 17 and 27, Kim further discloses wherein the optical element (105, fig. 3) is disposed between the light source (102, 103, fig. 3) and the collimating lens (125, fig. 3).

Regarding claims 9, 11, 20, and 22, Kim further discloses wherein the light source comprises a plurality of light sources to emit light having different wavelengths and the optical element adjusts the convergence/divergence of the light emitted from at least one of the plurality of light sources so that the optical pickup is compatible for a plurality of optical recording media having different formats (102, 103, fig. 3 and par. 23).

Regarding claim 24, Kim further discloses wherein the light source comprises an edge emitting laser or a vertical cavity surface-emitting laser to emit the light having a predetermined wavelength (102, 103, fig. 3).

Regarding claim 25, Kim further discloses wherein the collimating lens is disposed between the optical path changing device and the objective lens (125, fig. 3), so that the collimating lens focuses the divergent light emitted from the light source and makes the light into parallel light.

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The applied reference has a common assignee with the instant application.

Based upon the earlier effective U.S. filing date of the reference, it constitutes prior art only under 35 U.S.C. 102(e). This rejection under 35 U.S.C. 103(a) might be overcome by: (1) a showing under 37 CFR 1.132 that any invention disclosed but not claimed in the reference was derived from the inventor of this application and is thus not an invention "by another"; (2) a showing of a date of invention for the claimed subject matter of the application which corresponds to subject matter disclosed but not claimed in the reference, prior to the effective U.S. filing date of the reference under 37 CFR 1.131; or (3) an oath or declaration under 37 CFR 1.130 stating that the application and reference are currently owned by the same party and that the inventor named in the application is the prior inventor under 35 U.S.C. 104, together with a terminal disclaimer in accordance with 37 CFR 1.321(c). This rejection might also be overcome by showing

that the reference is disqualified under 35 U.S.C. 103(c) as prior art in a rejection under 35 U.S.C. 103(a). See MPEP § 706.02(l)(1) and § 706.02(l)(2).

**Claims 4, 15 and 26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kim et al (US 2002/0136132) in view of Kojima et al (US Patent 6084847).**

Regarding claims 4, 15 and 26, Kim '132 discloses everything claimed as applied above (see 102 rejection). Kim '132 fails to disclose wherein the collimating lens comprises a short focal length of 14mm or less. In the same field of endeavor, Kojima discloses a collimating lens with a focal length within the range of 11mm to 18mm (col. 10 lines 35-37). It would have been obvious to one of ordinary skill in the art to modify the collimator lens taught by Kim to have a focal length of 14mm or less as taught by Kojima. The rationale is as follows: One of ordinary skill in the art would have been motivated to provide a collimator lens of 14mm as a design choice parameter and to make optical pickup more compact.

**Claims 7, 8, 18, 19, 29, 30, 31, 32, 34 and 35 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kim et al (US 2002/0136132).**

Regarding claims 7, 8, 18, 19, 29, 30, 31, 32, and 34 Kim '132 further discloses a beam-shaping device (110, fig. 3), a path changing device (120, fig. 3), a plate beam splitter (115, fig. 3), a collimating lens (125, fig. 3), a light source (100, fig. 3), and an objective lens (130, fig. 3). The arrangement of the collimator lens and the beam shaping device with respect to the beam splitter and the light source is an obvious rearrangement of elements that does not change the function or the scope of the overall

invention. It would have been obvious to one of ordinary skill in the art to rearrange the collimating lens and the beam shaping device as it is a well known rearrangement of optical elements that does not change the scope of the invention.

Regarding claim 30, Kim '132 further discloses wherein the optical path-changing device comprises a plate beam splitter (115, fig. 3).

Regarding claim 35, Kim '132 further discloses a photo detector (145, fig. 3) and a lens for removing aberration (140, fig. 3) disposed in front of the photo detector with an inclination opposite that of the plate beam splitter (fig. 3).

**Claims 28, 33, 36 and 37 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kim et al (US 2002/0136132) in view of Kim (US Patent 6337841).**

Regarding claim 28, Kim '132 discloses everything claimed as applied above (see 102 rejection). Kim further discloses wherein the laser source emits a wavelength of 655 nm (par. 23) for a DVD type disc. Kim '132 fails to disclose the numerical aperture of the objective lens. In the same field of endeavor, Kim '841 discloses wherein the objective lens has a numerical aperture of 0.6 (col. 5 lines 58-60). It would have been obvious to one of ordinary skill in the art at the time of the applicant's invention to use a numerical aperture of .6 as it was a common numerical aperture of an objective lens used during DVD recording.

Regarding claims 33, 36 and 37, Kim '132 discloses everything as applied above (see rejection of claim 32 above)

Further regarding claim 33, Kim '132 discloses a grating (110, fig. 3), but fails to disclose wherein the grating is used for a three beam tracking method. In the same field of endeavor, Kim '841 discloses a grating splitting the light emitted from the light source into at least three light beams to detect a tracking an error signal using a three-beam method (col. 8 lines 10-14). It would have been obvious to one of ordinary skill in the art to modify the device disclosed by Kim '132 by providing a grating for a three beam method as taught by Kim '841. The rationale is as follows: One of ordinary skill in the art at the time of the applicant's invention would have been motivated to use a grating for a three beam tracking method in order to improve the detection of the tracking error signal.

Regarding claim 36, Kim '841 discloses wherein the optical element and the grating are formed in one united body (123, 223, fig. 3). It is obvious to form the optical element and the grating separately as a rearrangement of parts that does not change the scope of the invention.

Regarding claim 37, Kim further discloses wherein the grating and the optical element are formed in one unified body (223, fig. 11).

#### ***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

- (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1, 3, 6, 7, 8, 9, 11, 12, 14, 17, 18, 19, 20, 22, 23, 24, and 27 are rejected under 35 U.S.C. 102(b) as being anticipated by Park (US 2001/0043522).

Regarding claims 1, 3, 12, 14, and 23, park discloses an optical pickup of an optical disc for a recording/reproducing apparatus (fig. 2), comprising: a light source emitting a light (11, fig. 2); an objective lens (15, fig. 2) focusing the light emitted from the light source and irradiating the light on the optical disc (D1, D2, fig. 2) a collimating lens (14, fig. 2) making the light emitted from the light source into a parallel light; and a hologram optical element (12, fig. 2) adjusting a convergence and/or a divergence of the light and proceeding to the objective lens, and wherein the hologram optical element is adjusted along an optical axis to adjust the convergence and/or divergence of the light emitted from the light source during assembly of the optical pickup (fig. 2 and par. 33)

Regarding claims 6, 17 and 27, Park further discloses wherein the optical element (12, fig. 2) is disposed between the light source and the collimating lens (15, fig. 2).

Regarding claims 7, 8, 18, and 19 Park further discloses wherein the optical pickup further comprises a beam shaping device disposed between the collimating lens and the objective lens to shape the light (16, fig. 2).

Regarding claims 9, 11, 20, and 22, Park further discloses wherein the light source comprises a plurality of light sources to emit light having different wavelengths and the optical element adjusts the convergence/divergence of the light emitted from at least one of the plurality of light sources so that the optical pickup is compatible for a

plurality of optical recording media having different formats (11a, 11b, fig. 2 and par. 27).

Regarding claim 24, Park further discloses wherein the light source comprises an edge emitting laser or a vertical cavity surface-emitting laser to emit the light having a predetermined wavelength (11a, 11b, fig. 2).

Regarding claim 25, park further discloses wherein the collimating lens is disposed between the optical path changing device and the objective lens (14, fig. 3), so that the collimating lens focuses the divergent light emitted from the light source and makes the light into parallel light.

#### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

**Claims 4, 15 and 26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Park (US 2001/0043522) in view of Kojima et al (US Patent 6084847).**

Regarding claims 4, 15 and 26, Park discloses everything claimed as applied above (see 102 rejection). Park fails to disclose wherein the collimating lens comprises a short focal length of 14mm or less. In the same field of endeavor, Kojima discloses a collimating lens with a focal length within the range of 11mm to 18mm (col. 10 lines 35-

37). It would have been obvious to one of ordinary skill in the art to modify the collimator lens taught by Park to have a focal length of 14mm or less as taught by Kojima. The rationale is as follows: One of ordinary skill in the art would have been motivated to provide a collimator lens of 14mm to make optical pickup compact.

**Claim 29 is rejected under 35 U.S.C. 103(a) as being unpatentable over Park (US 2001/0043522).**

Regarding claims 29 Park discloses a beam-shaping device (16, fig. 2), a path changing device (13, fig. 2), a collimating lens (14, fig. 2), a light source (11, fig. 2), and an objective lens (15, fig.2). The arrangement of the collimator lens and the beam shaping device with respect to the beam splitter and the light source is an obvious rearrangement of elements that does not change the function or the scope of the overall invention. It would have been obvious to one or ordinary skill in the art to rearrange the collimating lens and the beam shaping device as it is a well known rearrangement of optical elements that does not change the scope of the invention.

**Claims 28, 30, 32, 33, 34, 36 and 37 are rejected under 35 U.S.C. 103(a) as being unpatentable over Park (US 2001/0043522) in view of Kim (US Patent 6337841).**

Regarding claim 28, Park discloses everything claimed as applied above (see 102 rejection). Park further discloses wherein the laser source emits a wavelength of 655 nm (par. 27) for a DVD type disc. Park fails to disclose the numerical aperture of the objective lens. In the same field of endeavor, Kim '841 discloses wherein the objective lens has a numerical aperture of 0.6 (col. 5 lines 58-60). It would have been

obvious to one of ordinary skill in the art at the time of the applicant's invention to use a numerical aperture of 0.6 as it was a common numerical aperture of an objective lens used during DVD recording.

Regarding claim 30, Kim '841 further discloses wherein the optical path-changing device comprises a plate beam splitter (231, fig. 11). It would have been obvious to use a plate beam splitter as an alternative to a quad-beam splitter disclosed by Park as it is well known in the art.

Regarding claim 31, Park further discloses a beam shaping element disposed on a path of the light after passing through the collimating lens and the optical element (16, fig. 2).

Regarding claims 32 and 34, the arrangement of elements in claims 32 and 34 are obvious rearrangements of the elements disclosed by Park in view or Kim.

Regarding claims 33, 36 and 37, Park discloses everything as applied above (see rejection of claim 32 above)

Further regarding claim 33, Park discloses a grating (12, fig. 2), splitting the light emitted from the light source into at least three light beams to detect a tracking an error signal using a three-beam method (par. 40 and figs. 3 and 4).

Regarding claims 36 and 37, Park discloses wherein the optical element and the grating are formed in one united body (12, fig. 2). It is obvious to form the optical element and the grating separately as a rearrangement of parts that does not change the scope of the invention.

***Response to Arguments***

Applicant's arguments with respect to the pending claims have been considered but are moot in view of the new ground(s) of rejection.

***Conclusion***

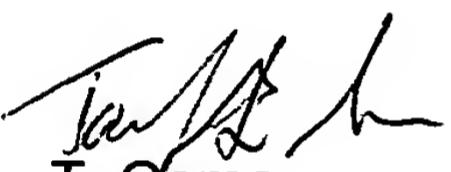
Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tawfik Goma whose telephone number is (571) 272-4206. The examiner can normally be reached on 8:30 am - 5:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, William Korzuch can be reached on (571) 272-7589. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



T. Goma  
6/30/2006



THANG V. TRAN  
PRIMARY EXAMINER